MEDICAL POLICY

POLICY TITLE	AMBULATORY EVENT MONITORS AND MOBILE CARDIAC OUTPATIENT TELEMETRY
POLICY NUMBER	MP-2.036

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I. POLICY

Ambulatory Event Monitors

The use of patient-activated or auto-activated external ambulatory event monitors may be considered **medically necessary** in the following situations:

- Patients with infrequent symptoms (less frequent than every 48 hours), or who have undergone a nondiagnostic Holter monitor for symptoms suggestive of cardiac arrhythmias (i.e., palpitations, dizziness, presyncope, or syncope).
- Patients who have been treated with catheter ablation, and in whom discontinuation of systemic anticoagulation is being considered or to document the results of an ablative procedure for arrhythmia
- Patients in whom antiarrhythmic drug therapy has been initiated or withdrawn to document the results of the intervention
- Patients with cryptogenic stroke who have a negative standard work-up for atrial fibrillation (AF) and in whom the results of a 24 hour Holter monitor are likely to be nondiagnostic
- Patients suspected of having cardiac ischemia to record electrocardiographic changes

The use of external ambulatory event monitors for all other indications is considered to be **investigational**. There is insufficient evidence to support a conclusion concerning the health outcomes or benefits associated with this procedure.

Mobile Cardiac Outpatient Telemetry (Real-Time, Outpatient Cardiac Monitoring, Ambulatory Electrocardiography [AEOG] or MCOT)

Mobile cardiac outpatient telemetry (real-time, outpatient cardiac monitoring, AEOG, or MCOT) may be considered **medically necessary** for any of the following indications:

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Adult Clinical Criteria

- For the diagnosis of recurrent symptoms related to an arrhythmia (i.e., presyncope, syncope, dizziness, or palpitations) that occur infrequently (less frequent than once every 48 hours), AND for which a diagnosis has not been determined after standard diagnostic workup (e.g., complete clinical history and physical examination, standard 12-lead electrocardiography [ECG], cardiac imaging) and is not likely to be diagnosed with a Holter monitor
    - The ordering provider must document the prior testing performed and the results
- For diagnosis in patients who experienced a cryptogenic stroke and have a negative work-up for AF when the etiology of the symptoms/conditions of arrhythmia has not been determined after standard diagnostic workup (e.g., a complete clinical history and physical examination, standard 12-lead ECG, cardiac imaging), and not likely to be diagnosed with a Holter monitor.
- To evaluate function of pacemakers or implantable cardioverter defibrillators (ICDs) in order to assess any of the following:
    - Symptoms of palpitation, syncope, or near syncope to assess device function to exclude myopotential inhibition and pacemaker mediated tachycardia
    - Symptoms of palpitation, syncope, or near syncope to assist in programming parameters such as rate-responsivity and automatic mode switching
    - Suspected component failure or malfunction when device interrogation is not definitive in establishing a diagnosis
    - Response to adjunctive pharmacologic therapy in individuals receiving frequent ICD therapy

Pediatric Clinical Criteria

In accord with the American College of Cardiology/American Heart Association (ACC/AHA), indications for pediatric AECG monitoring, including MCOT monitoring, may be considered **medically necessary** for the evaluation of the following indications:

- Antiarrhythmic drug efficacy
- Asymptomatic congenital atrioventricular (AV) block, nonpaced
- Syncope, near syncope, or dizziness with recognized heart disease, previously documented arrhythmia, or pacemaker dependency
- Syncope or near syncope associated with exertion when the cause is not established by other methods
- Hypertrophic or dilated cardiac myopathies
- Possible or documented long QT syndromes
- Palpitations in individuals with prior surgery for congenital heart disease and significant residual hemodynamic abnormalities

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The use of MCOT or AEOG is considered to be **investigational** for all other indications. There is insufficient evidence to support a conclusion concerning the health outcomes or benefits associated with this procedure.

Subcutaneous Cardiac Rhythm Monitoring

The use of subcutaneous cardiac rhythm monitoring, either patient-activated or auto-activated, may be considered **medically necessary** in the following situations:

- In the small subset of patients who experience recurrent symptoms thought to be due to a cardiac arrhythmia so infrequently that prior evaluation with an external ambulatory event monitor or MCOT has been unsuccessful.
- In patients with cryptogenic stroke who have had a negative standard work-up for AF, including evaluation with an external ambulatory event monitor or MCOT (see Policy Guidelines section)

The use of subcutaneous cardiac rhythm monitoring is considered to be **investigational** for all other indications. There is insufficient evidence to support a conclusion concerning the health outcomes or benefits associated with this procedure.

Policy Guidelines for Real-time outpatient cardiac monitoring

Real-time outpatient cardiac monitoring is contraindicated for use in patients at high risk of developing sustained ventricular tachycardia or ventricular fibrillation and/or would be more appropriately cared for in a hospital setting.

This service is not indicated for all patients with arrhythmias. It should be used only in circumstances where traditional Holter monitoring or cardiac event recording is not expected to provide adequate information or has been unrevealing.

This system is also not indicated for use as a screening tool.

This monitoring is expected to not be reported more than once in a 30-day period and is expected to not be reported more than twice in a twelve month period.

Cross-references:

MP-2.007 Cardiac Resynchronization Therapy for the Treatment of Heart Failure
MP-4.003 Medical Necessity

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II. PRODUCT VARIATIONS

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This policy is only applicable to certain programs and products administered by Capital BlueCross please see additional information below, and subject to benefit variations as discussed in Section VI below.

FEP PPO - Refer to FEP Medical Policy Manual, MP-2.02.08 Ambulatory Event Monitors and Mobile Cardiac Outpatient Telemetry. The FEP Medical Policy Manual can be found at: https://www.fepblue.org/benefit-plans/medical-policies-and-utilization-management-guidelines/medical-policies

III. DESCRIPTION/BACKGROUND

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Cardiac Arrhythmias

Cardiac monitoring is routinely used in the inpatient setting to detect acute changes in heart rate or rhythm that may need urgent response. For some conditions, a more prolonged period of monitoring in the ambulatory setting is needed to detect heart rate or rhythm abnormalities that may occur infrequently. These cases may include the diagnosis of arrhythmias in patients with signs and symptoms suggestive of arrhythmias as well as the evaluation of paroxysmal AF.

Cardiac arrhythmias may be suspected because of symptoms suggestive of arrhythmias, including palpitations, dizziness, or syncope or presyncope, or because of abnormal heart rate or rhythm noted on exam. A full discussion of the differential diagnosis and evaluation of each of these symptoms is beyond the scope of this review, but some general principles on the use of ambulatory monitoring are discussed.

Arrhythmias are an important potential cause of syncope or near syncope, which in some cases may be described as dizziness. An electrocardiogram (ECG) is generally indicated whenever there is suspicion of a cardiac cause of syncope. Some arrhythmic causes will be apparent on ECG. However, for patients in whom an ECG is not diagnostic, longer monitoring may be indicated. The 2009 joint guidelines from the European Society of Cardiology and 3 other medical specialty societies suggested that, in individuals with clinical or ECG features suggesting an arrhythmic syncope, ECG monitoring is indicated; the guidelines also stated that the "duration (and technology) of monitoring should be selected according to the risk and the predicted recurrence rate of syncope."[1], Similarly, guidelines from the National Institute for Health and Care Excellence (2014) on the evaluation of transient loss of consciousness, have recommended the use of an ambulatory ECG in individuals with a suspected arrhythmic cause of syncope. The type and duration of monitoring recommended is based on the individual's history, particularly the frequency of transient loss of consciousness[2]. The Holter monitor is recommended if transient loss of consciousness occurs several times a week. If the frequency of transient loss of consciousness is every 1 to 2 weeks, an external event recorder is recommended; and if the frequency is less than once every 2 weeks, an implantable event recorder is recommended.

Similar to syncope, the evaluation and management of palpitations is patient-specific. In cases where the initial history, examination, and ECG findings are suggestive of an arrhythmia, some form of ambulatory ECG monitoring is indicated. A position paper from the European Heart Rhythm Association (2011) indicated that, for individuals with palpitations of unknown origin who have clinical features suggestive of arrhythmia, referral for specialized evaluation with consideration for ambulatory ECG monitoring is indicated.[3]

AF Detection

AF is the most common arrhythmia in adults. It may be asymptomatic or be associated with a broad range of symptoms, including lightheadedness, palpitations, dyspnea, and a variety of more nonspecific symptoms (e.g., fatigue, malaise). It is classified as paroxysmal, persistent, or permanent based on symptom duration. Diagnosed AF may be treated with antiarrhythmic medications with the goal of rate or rhythm control, direct cardioversion, catheter-based radiofrequency- or cryo-energy-based ablation, or one of several surgical techniques, depending on the patient's comorbidities and associated symptoms.

AF is associated with the development of thrombi in the atria, often the left atrial appendage. Patients with AF are at risk for ischemic stroke due to the risk of embolism of the thrombus. Multiple clinical trials have demonstrated that anticoagulation reduces the ischemic stroke risk in patients at moderate or high risk of thromboembolic events. Oral anticoagulation in patients with AF reduces the risk of subsequent stroke and was recommended by American Heart Association and American College of Cardiology in 2014 guidelines on patients with a history of stroke or transient ischemic attack.[4]

Ambulatory ECG monitoring may play a role in several situations in the detection of AF. In patients who have undergone ablative treatment for AF, if ongoing AF can be excluded with reasonable certainty, including paroxysmal AF which may not be apparent on ECG during an office visit, anticoagulation therapy could potentially be stopped. In some cases where identifying paroxysmal AF is associated with potential changes in management, longer term monitoring may be considered. There are well-defined management changes that occur in patients with AF. However, until relatively recently the specific role of long-term (ie, greater than 48 hours) monitoring in AF was not well-described.

Patients with cryptogenic stroke are often monitored for the presence of AF, because AF is estimated to be the cause of cryptogenic stroke in more than 10% of patients, and AF increases the risk of stroke.[5,6] Paroxysmal AF confers an elevated risk of stroke, just as persistent and permanent AF do. In individuals with a high risk of stroke, particularly those with a history of ischemic stroke that is unexplained by other causes, prolonged monitoring to identify paroxysmal AF has been investigated.

Cardiac Rhythm Ambulatory Monitoring Devices

Ambulatory cardiac monitoring with a variety of devices permits the evaluation of cardiac electrical activity over time, in contrast to a static ECG, which only permits the detection of abnormalities in cardiac electrical activity at a single point in time.

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A Holter monitor is worn continuously and records cardiac electrical output continuously throughout the recording period. Holter monitors are capable of recording activity for up to about 24 to 72 hours. Traditionally, most Holter monitors had 3 channels based on 3 ECG leads. However, some currently available Holter monitors have up to 12 channels. Holter monitors are an accepted intervention in a variety of settings where a short period (24-48 hours) of comprehensive cardiac rhythm assessment is needed (e.g., suspected arrhythmias when symptoms [syncope, palpitations] are occurring daily). These devices are not the focus of this review.

Various classes of devices are available for situations where longer monitoring than can be obtained with a traditional Holter monitor is needed. Because there may be many devices within each category, a comprehensive description of each device is beyond our scope. Specific devices may vary in how data are transmitted to the location where the ECG output is interpreted. Data may be transmitted via cellular phone or landline, or by direct download from the device after its return to the monitoring center. The device classes are described in Table 1.

Table 1. Ambulatory Cardiac Rhythm Monitoring Devices

Device Class	Description	Device Examples
Noncontinuous devices with memory (event recorder)	Devices not worn continuously but rather activated by patient and applied to skin in the precordial area when symptoms develop	• Zio® Event Card (iRhythm Technologies) • REKA E100™ (REKA Health)
Continuous recording devices with longer recording periods	Devices continuously worn and continuously record via one or more cardiac leads and store data longer than traditional Holter (14 d)	• Zio® Patch system (iRhythm Technologies)
External memory loop devices (patient or autotriggered)	Devices continuously worn and store a single channel of ECG data in a refreshed memory. When the device is activated, the ECG is then recorded from the memory loop for the preceding 30-90 s and for next 60 s or so. Devices may be activated by a patient when symptoms occur (patient-triggered) or by an automated algorithm when changes suggestive of an arrhythmia are detected (autotriggered).	• Patient-triggered: Explorer™ Looping Monitor (LifeWatch Services) • Autotriggered: LifeStar AF Express™ Auto-Detect Looping Monitor (LifeWatch Services) • Autotriggered or patient-triggered: King of Hearts Express® AF (Card Guard Scientific Survival)
Implantable memory loop devices (patient- or autotriggered)	Devices similar in design to external memory loop devices but implanted under the skin in the precordial region	• Autotriggered or patient-triggered: Reveal® XT ICM (Medtronic) and Confirm Rx Insertable™ Cardiac Monitor (Abbott) • Autotriggered: BioMonitor, Biotronik)
Mobile cardiac outpatient telemetry	Continuously recording or autotriggered memory loop devices that transmit data to a central	• CardioNet MCOT (BioTelemetry) • LifeStar Mobile Cardiac Telemetry (LifeWatch Services)

	recording station with real-time monitoring and analysis	• SEEQ Mobile Cardiac Telemetry (Medtronic)

ECG: electrocardiogram

There are also devices that combine features of multiple classes. For example, the LifeStar ACT Ex Holter (LifeWatch Services) is a 3-channel Holter monitor, but is converted to a mobile cardiac telemetry system if a diagnosis is inconclusive after 24 to 48 hours of monitoring. The BodyGuardian® Heart Remote Monitoring System (Preventice Services) is an external autotriggered memory loop device that can be converted to a real-time monitoring system. The eCardio Verité™ system (eCardio) can switch between a patient-activated event monitor and a continuous telemetry monitor. The Spiderflash-T (LivaNova) is an example of an external autotriggered or patient-triggered loop recorder, but, like the Zio Patch, can record 2 channels for 14 to 40 days.

REGULATORY STATUS

Some of the newer devices are described in the Background section for informational purposes. However, because there may be many devices within each category, a comprehensive description of individual devices is beyond the scope of this review. FDA product codes include: DSH, DXH, DQK, DSI, MXD, MHX.

IV. RATIONALE

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Summary of Evidence

Ambulatory Event Monitoring

For individuals who have signs and/or symptoms suggestive of arrhythmia(s) who receive patient- or autoactivated external ambulatory event monitoring or continuous ambulatory monitoring storing information for more than 48 hours, the evidence includes prospective and retrospective studies reporting on the diagnostic yield. Relevant outcomes are overall survival and morbid events. Studies have shown that continuous monitoring with longer recording periods clearly detects more arrhythmias than 24- or 48-hour Holter monitoring. Particularly for patients who, without the more prolonged monitoring, would only undergo shorter term monitoring, the diagnostic yield is likely to identify arrhythmias that may have therapeutic implications. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have AF following ablation who receive long-term ambulatory cardiac monitoring, the evidence includes an RCT comparing ambulatory event monitoring with standard care and several observational studies. Relevant outcomes are overall survival, morbid events, medication use, and treatment-related morbidity. The RCT evaluating a long-term monitoring strategy after catheter ablation for AF reported significantly higher rates of AF detection. The available evidence has suggested that long-term monitoring for AF postablation is associated with improved outcomes. However, the specific type of monitoring associated with the best outcomes is not established, because different long-term monitoring devices were used across the studies. Trials

demonstrating improved outcomes have used event monitors or implantable monitors. In addition, there are individual patient considerations that may make 1 type of monitor preferable over another. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who have cryptogenic stroke with a negative standard workup for AF who receive long-term ambulatory cardiac monitoring, the evidence includes systematic reviews of RCTs comparing ambulatory event monitoring with standard care. Relevant outcomes are overall survival, morbid events, medication use, and treatment-related morbidity. RCTs evaluating a long-term AF monitoring strategy poststroke have reported significantly higher rates of AF detection with longer term ambulatory monitoring. The available evidence has suggested that long-term monitoring for AF after cryptogenic stroke is associated with improved outcomes, but the specific type of monitoring associated with the best outcomes is not established, because different long-term monitoring devices were used across the studies. Trials demonstrating improved outcomes have used event monitors or implantable monitors. In addition, there are individual patient considerations that may make 1 type of monitor preferable over another. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

For individuals who are asymptomatic with risk factors for AF who receive long-term ambulatory cardiac monitoring, the evidence includes an RCT and 2 nonrandomized studies. Relevant outcomes are overall survival, morbid events, medication use, and treatment-related morbidity. The studies showed use of the ambulatory monitors would result in higher AF detection compared with routine care. However, the RCT followed patients for 1 year and did not detect a difference in stroke occurrence between the monitored group and the standard of care group. The other studies did not discuss changes in patient management or health outcomes based on monitoring. Studies reporting on improved outcomes with longer follow-up are needed. The evidence is insufficient to determine the effects of the technology on health outcomes.

Implantable Loop Recording

For individuals who have signs and/or symptoms suggestive of arrhythmia with infrequent symptoms who receive patient- or autoactivated implantable ambulatory event monitoring, the evidence includes RCTs comparing implantable loop recorders with shorter term monitoring, usually 24- to 48-hour Holter monitoring, and many observational studies. Relevant outcomes are overall survival, morbid events, medication use, and treatment-related morbidity. Studies assessing prolonged implantable loop recorders in patients have reported high rates of arrhythmia detection compared with shorter external event or Holter monitoring. These studies have supported use of a progression in diagnostics from an external event monitor to implantable loop recorder when longer monitoring is needed. The evidence is sufficient to determine that the technology results in a meaningful improvement in the net health outcome.

Outpatient Cardiac Telemetry

For individuals who have signs and/or symptoms suggestive of arrhythmia who receive outpatient cardiac telemetry, the evidence includes an RCT and nonrandomized studies evaluating rates of

arrhythmia detection using outpatient cardiac telemetry. Relevant outcomes are overall survival and morbid events. The available evidence has suggested that outpatient cardiac telemetry is at least as good at detecting arrhythmias as ambulatory event monitoring. However, studies have not evaluated whether the real-time monitoring feature of outpatient cardiac telemetry leads to reduced cardiac events and mortality. The evidence is insufficient to determine the effects of the technology on health outcomes.

V. DEFINITIONS

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HOLTER MONITOR is a portable device small enough to be worn by a patient during normal activity. It consists of an electrocardiograph and a recording system capable of storing up to twenty-four hours of the patient's EKG record.

MYOCARDIAL INFARCTION is the loss of heart muscle as a result of coronary artery occlusion.

SYNCOPE is a sudden but transient total loss of consciousness with spontaneous resolution.

VI. BENEFIT VARIATIONS

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The existence of this medical policy does not mean that this service is a covered benefit under the member's health benefit plan. Benefit determinations should be based in all cases on the applicable health benefit plan language. Medical policies do not constitute a description of benefits. A member's health benefit plan governs which services are covered, which are excluded, which are subject to benefit limits and which require preauthorization. There are different benefit plan designs in each product administered by Capital BlueCross. Members and providers should consult the member's health benefit plan for information or contact Capital BlueCross for benefit information.

VII. DISCLAIMER

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Capital BlueCross's medical policies are developed to assist in administering a member's benefits, do not constitute medical advice and are subject to change. Treating providers are solely responsible for medical advice and treatment of members. Members should discuss any medical policy related to their coverage or condition with their provider and consult their benefit information to determine if the service is covered. If there is a discrepancy between this medical policy and a member's benefit information, the benefit information will govern. If a provider or a member has a question concerning the application of this medical policy to a specific member's plan of benefits, please contact Capital BlueCross' Provider Services or Member Services. Capital BlueCross considers the information contained in this medical policy to be proprietary and it may only be disseminated as permitted by law

VIII. CODING INFORMATION

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Note: This list of codes may not be all-inclusive, and codes are subject to change at any time. The identification of a code in this section does not denote coverage as coverage is determined by the terms of member benefit information. In addition, not all covered services are eligible for separate reimbursement.

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Ambulatory Event Monitors are Covered when medically necessary:

CPT Codes®								
0497T	0498T	93241	93242	93243	93244	93245	93246	93247
93248	93268	93270	93271	93272				

ICD-10-CM Diagnosis Code	Description
G45.9	Transient cerebral ischemic attack, unspecified
I20.1	Angina pectoris with documented spasm
I24.9	Acute ischemic heart disease, unspecified
I25.82	Chronic total occlusion of coronary artery
I42.0	Dilated cardiomyopathy
I42.1	Obstructive hypertrophic cardiomyopathy
I42.2	Other hypertrophic cardiomyopathy
I42.8	Other cardiomyopathies
I44.0	Atrioventricular block, first degree
I44.1	Atrioventricular block, second degree
I44.2	Atrioventricular block, complete
I44.30	Unspecified atrioventricular block
I44.39	Other atrioventricular block
I44.4	Left anterior fascicular block
I44.5	Left posterior fascicular block
I44.60	Unspecified fascicular block
I44.69	Other fascicular block
I44.7	Left bundle-branch block, unspecified
I45.0	Right fascicular block
I45.10	Unspecified right bundle-branch block
I45.19	Other right bundle-branch block
I45.2	Bifascicular block
I45.3	Trifascicular block
I45.4	Nonspecific intraventricular block
I45.5	Other specified heart block
I45.6	Pre-excitation syndrome
I45.81	Long QT syndrome
I45.89	Other specified conduction disorders

I45.9	Conduction disorder, unspecified
I46.2	Cardiac arrest due to underlying cardiac condition
I46.8	Cardiac arrest due to other underlying condition
I46.9	Cardiac arrest, cause unspecified
I47.0	Re-entry ventricular arrhythmia
I47.1	Supraventricular tachycardia
I47.2	Ventricular tachycardia
I47.9	Paroxysmal tachycardia, unspecified
I48.0	Paroxysmal atrial fibrillation
I48.3	Typical atrial flutter
I48.4	Atypical atrial flutter
I48.11	Longstanding persistent atrial fibrillation
I48.19	Other persistent atrial fibrillation
I48.20	Chronic atrial fibrillation, unspecified
I48.21	Permanent atrial fibrillation
I48.91	Unspecified atrial fibrillation
I48.92	Unspecified atrial flutter
I49.01	Ventricular fibrillation
I49.02	Ventricular flutter
I49.1	Atrial premature depolarization
I49.2	Junctional premature depolarization
I49.3	Ventricular premature depolarization
I49.40	Unspecified premature depolarization
I49.49	Other premature depolarization
I49.5	Sick sinus syndrome
I49.8	Other specified cardiac arrhythmias
I49.9	Cardiac arrhythmia, unspecified
I63.81	Other cerebral infarction due to occlusion or stenosis of small artery
I63.89	Other cerebral infarction
I63.9	Cerebral infarction, unspecified
I67.841	Acute cerebrovascular insufficiency
I67.848	Other cerebrovascular vasospasm and vasoconstriction
R00.0	Tachycardia, unspecified
R00.1	Bradycardia, unspecified
R00.2	Palpitations

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R06.00	Dyspnea, unspecified
R06.02	Shortness of breath
R06.03	Acute respiratory distress
R06.09	Other forms of dyspnea
R06.3	Periodic breathing
R42	Dizziness and giddiness
R55	Syncope and collapse
Z79.01	Long term (current) use of anticoagulants
Z79.02	Long term (current) use of antithrombotics/antiplatelets
Z79.899	Other long term (current) drug therapy
Z86.73	Personal history of transient ischemic attack (TIA), and cerebral infarction without residual deficits
Z86.74	Personal history of sudden cardiac arrest
Z87.74	Personal history of (corrected) congenital malformations of heart and circulatory system
Z95.0	Presence of cardiac pacemaker

Mobile Cardiac Outpatient Telemetry is Covered when Medically Necessary:

CPT Codes®								
93228	93229							

ICD-10-CM Diagnosis Codes	Description
G45.9	Transient cerebral ischemic attack, unspecified
I24.9	Acute ischemic heart disease, unspecified
I42.0	Dilated cardiomyopathy
I42.1	Obstructive hypertrophic cardiomyopathy
I42.2	Other hypertrophic cardiomyopathy
I44.0	Atrioventricular block, first degree
I44.1	Atrioventricular block, second degree
I44.2	Atrioventricular block, complete
I44.30	Unspecified atrioventricular block
I45.6	Pre-excitation syndrome
I45.81	Long QT syndrome
I45.89	Other specified conduction disorders
I47.0	Re-entry ventricular arrhythmia
I47.1	Supraventricular tachycardia
I47.2	Ventricular tachycardia

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ICD-10-CM Diagnosis Codes	Description
I47.9	Paroxysmal tachycardia, unspecified
I48.0	Paroxysmal atrial fibrillation
I48.3	Typical atrial flutter
I48.4	Atypical atrial flutter
I48.11	Longstanding persistent atrial fibrillation
I48.19	Other persistent atrial fibrillation
I48.20	Chronic atrial fibrillation, unspecified
I48.21	Permanent atrial fibrillation
I48.91	Unspecified atrial fibrillation
I48.92	Unspecified atrial flutter
I49.1	Atrial premature depolarization
I49.2	Junctional premature depolarization
I49.3	Ventricular premature depolarization
I49.5	Sick sinus syndrome
I63.81	Other cerebral infarction due to occlusion or stenosis of small artery
I63.89	Other cerebral infarction
I63.9	Cerebral infarction, unspecified
I67.841	Acute cerebrovascular insufficiency
I67.848	Other cerebrovascular vasospasm and vasoconstriction
Q21.2	Atrioventricular septal defect
R00.0	Tachycardia, unspecified
R00.1	Bradycardia, unspecified
R00.2	Palpitations
R42	Dizziness and giddiness
R55	Syncope and collapse
Z79.01	Long term (current) use of anticoagulants
Z79.02	Long term (current) use of antithrombotics/antiplatelets
Z79.899	Other long term (current) drug therapy
Z87.74	Personal history of (corrected) congenital malformations of heart and circulatory system
Z95.0	Presence of cardiac pacemaker

Subcutaneous Cardiac Rhythm Monitoring is Covered when Medically Necessary:

CPT Codes®								
33285	33286	93285	93291	93298				

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HCPCS Code	Description
E0616	Implantable cardiac event recorder with memory, activator, and programmer
C1764	Event recorder, cardiac (implantable)
G2066	Interrogation device evaluation(s), (remote) up to 30 days; implantable cardiovascular physiologic monitor system, implantable loop recorder system, or subcutaneous cardiac rhythm monitor system, remote data acquisition(s), receipt of transmissions and technician review, technical support and distribution of results

Covered if patient's prior evaluation with AEM or MCOT have been unsuccessful

IX. REFERENCES

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97. *Blue Cross Blue Shield Association Medical Policy Reference Manual. 2.02.08, Ambulatory Event Monitors and Mobile Cardiac Outpatient Telemetry. June 2020.*

X. POLICY HISTORY

TOP

MP 2.036	**CAC 2/25/03**
	CAC 7/29/03
	CAC 11/30/04
	CAC 10/25/05
	CAC 2/28/06
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POLICY TITLE	AMBULATORY EVENT MONITORS AND MOBILE CARDIAC OUTPATIENT TELEMETRY
POLICY NUMBER	MP-2.036

	CAC 3/31/09 Consensus
	CAC 3/30/10 Consensus
	CAC 7/26/11 Adopted BCBSA. Ambulatory event monitoring (AEM) criteria for monitoring of antiarrhythmic therapy revised from Medically Necessary to Investigational. Medicare variation added for AEM.
	1/31/2012 Admin Change as per instructions regarding Holter Monitor.
	CAC 3/26/13 Minor review. • This is a partial adopt BCBSA policy. Section on Mobile Cardiac Outpatient Telemetry (Outpatient Cardiac Telemetry) does not match BCBSA. • Regarding use of patient-activated or auto-activated external ambulatory event monitors. The following was added as medically necessary. "Patients with atrial fibrillation who have been treated with catheter ablation, and in whom discontinuation of systemic anticoagulation is being considered" • References updated. • FEP variation added to reference the FEP manual. • Background/Description updated to be current with advancing technology. • Added reference to Novitas Solutions Local Coverage Determination (LCD) L27520 Real Time Outpatient Telemetry in Medicare variation.
	02/18/13 Administrative update. Unspecified codes removed from policy
	05/13/13 Administrative update. code review completed.
	12/1/14 Administrative update. Added reference in the Medicare variation to LCD L32679 Cardiac Event Detection Monitoring effective 12/4/14.
	1/27/15 Minor review. Adopting BCBSA with the following changes. Added the following medically necessary indication for patient-activated or auto-activated external ambulatory event monitors • Patients with cryptogenic stroke who have a negative standard work-up for atrial fibrillation including a 24-hour Holter monitor Changed policy statements for MCOT. Deleted list of MN criteria. Added information regarding least costly alternative. Added reference to MP 4.003 Medically Necessary. Added policy guidelines. Changed policy statement for implantable monitors. Deleted requirement to have holter monitor testing prior to implantation and added criteria to have other external ambulatory event monitoring for an extended period of at least 21 days prior to implantation. Added statement regarding use of continuous ambulatory monitors that record and store information for periods longer than 48 hours (was coded as investigational). Now may be considered medically necessary as a diagnostic alternative to Holter monitoring or patient-activated or auto-activated external ambulatory event monitors in the following situations.

	• Patients who experience infrequent symptoms (less frequently than every 48 hours) suggestive of cardiac arrhythmias (i.e., palpitations, dizziness, presyncope, or syncope). • Patients with atrial fibrillation who have been treated with catheter ablation, and in whom discontinuation of systemic anticoagulation is being considered. • Patients with cryptogenic stroke who have a negative standard work-up for atrial fibrillation including a 24-hour Holter monitor Coding reviewed. Added reference to LCD L32679 in the Medicare variation.
	11/2/15 Administrative update. LCD number changed from L32679 and L27520 to L34953 and L34997 due to Novitas update to ICD-10.
	CAC 1/26/16 Minor revision. Added a statement that use of an implantable ambulatory event monitor is medically necessary for patients with cryptogenic stroke who have had a negative standard work-up for atrial fibrillation including a 24-hour Holter monitor. Policy statement related to the use of mobile cardiac outpatient telemetry changed from "not medically necessary" to "investigational". Policy guidelines revised. Rationale and reference update. Coding updated.
	06/22/16 Administrative update. Coding update.
	1/1/17 Administrative update. New diagnosis codes added effective 10/1/16. Variations reformatted.
	2/1/17 Administrative update. Policy revised to indicate that Mobile Cardiac Outpatient Telemetry (Real-Time, Outpatient Cardiac Monitoring, AEOG, or MCOT) is now considered medically necessary for select adult and pediatric patients who meet specific policy indications and all other indications are considered investigational. Also for the use of external ambulatory external even monitors three new indications were added to include: • Patients in whom antiarrhythmic drug therapy has been initiated to document the results of therapy • Patients in whom antiarrhythmic drug therapy has been withdrawn to record recurrence of an arrhythmia • Patients suspected of having cardiac ischemia to record electrocardiographic changes Two of the existing indications for external ambulatory event monitors were revised to include additional criteria/indications: • Patients with infrequent (less frequent than every 48 hours), or those with a nondiagnostic Holter monitor who experience symptoms suggestive of cardiac arrhythmias (i.e., palpitations, dizziness, presyncope, or syncope).

POLICY TITLE	AMBULATORY EVENT MONITORS AND MOBILE CARDIAC OUTPATIENT TELEMETRY
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	• Patients who have been treated with catheter ablation, and in whom discontinuation of systemic anticoagulation is being considered or to document the results of an ablative procedure for arrhythmia A statement was added that all other indications for external ambulatory event monitors are considered investigational. Continuous ambulatory monitors that record and store information for periods longer than 48 hours criteria were removed from the policy. Coding Reviewed.
	CAC 7/25/17 Consensus review. No changes to the policy statements. Background, references and rationale updated. Coding reviewed. New ICD 10 diagnosis codes added effective 10/1/17.
	1/1/18 Administrative update. Medicare variations removed from Commercial Policies.
	2/28/18 Consensus review. No change to policy statements. Background, rationale and references reviewed.
	10/1/18 Administrative update. Removed deleted ICD-10 codes and added new ICD-10 codes effective 10/1/18.
	1/1/19 Administrative update. Added new CPT codes 33285, 33286. Removed deleted CPT codes.
	1/10/19 Consensus Review. Language change from implantable ambulatory event monitors to subcutaneous cardiac rhythm monitoring. Rationale condensed and references updated.
	7/17/19 Administrative update. Coding review. Coding updated and separated out Subcutaneous Cardiac Rhythm Monitoring.
	10/1/19 Coding updated. New ICD10 coding updated.
	1/1/20 Coding updated. Added new code G2066. Removed end-dated code 93299.
	1/31/20 Consensus review. Coding and policy reviewed. No change to policy statement, removed diagnosis codes 148.1 and 148.2. References updated.
	11/6/20 Consensus review. No change to policy statement. References updated.
	1/1/21 Adminisitrative update. New 2021 codes added to the policy as medically necessary with criteria; deleted codes removed.

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